Problem 1. *(3 points) Draw a picture illustrating the Mean Value Theorem (as on Tuesday's worksheet). Explain the picture in your own words.*

Problem 2. *(3 points) Draw a function satisfying:*
$f'(x) > 0$ *for* $x < 2$, $f'(x) < 0$ *for* $x > 2$, $f''(x) < 0$ *for all* x.

Problem 3. *(4 points) Let* $f(x) = x^2 - x$.

(a) Find the intervals of increase or decrease.

(b) Find the local maximum and minimum values.

(c) Find the intervals of concavity and the inflection points.

(d) Use this information to sketch the graph of f.